

The '961 patent is directed to a method and apparatus for using a fine mist spray to cool an area, and even to cool a single person, by evaporative cooling. There is described a fan propelled misting apparatus for providing a high velocity of air and a finely divided mist to effect the cooling of wide areas by rapidly evaporating the mist

The '961 reference which teaches mists for evaporative cooling, the present invention is directed to a method of generating a water spray suitable for cleaning activities. It is noted that Claim 1 does not specifically recite "cleaning spray," however, claim 12 is directed to "A method of cleaning a hard surface comprising...a water spray generated by a method according to claim 1." Applicant would be willing to amend claims 1 and 3 to recite a "cleaning spray" in order to expedite prosecution of the application to further distinguish over the cooling mist of the Utter et al reference.

It is further noted that the feature of surrounding the water droplets with the gas flow as recited in claim 18 is not taught by Utter et al and would not appear to be inherent in the Utter et al process which uses a fine mist.

The cleaning spray of the present invention comprises large droplets formed by entraining the spray from a nozzle in an air stream such that the diameter of the water droplets 1m from the nozzle opening is from 0.5 to 2 mm. These rather large water droplets can be propelled a significant distance and are particularly suitable for cleaning purposes due to their rather large size and considerable momentum produced by the gas stream rather than increasing the water pressure feeding the nozzle. Thus, the use of high pressure in the water nozzle which had been previously thought necessary to enhance cleaning power can be avoided. This is an unexpected result. The use of the gas stream not only entrains the water droplets and propels them towards the surface being cleaned,

but also controls the formation of the droplets and reduces the tendency of the surrounding air to atomize the droplets, as is the case when a high pressure water stream emerges from a nozzle into the ambient air. The cleaning stream can be effective at various ranges such as 1 to 4 meters from the spray nozzle due to the large amount of momentum stored in the droplets..

In contrast to the present invention, the '961 patent is directed toward cooling the face of a human being with a very fine mist of water accompanied by an air stream to enhance the cooling effect. This reference does not address the objective of propelling large drops of water at sufficient velocities for cleaning purposes without increasing the pressure of the water source. The water drops of the present invention as set forth in claim 1 are in the range of 0.5mm to 2mm which is from 2 or 3 times to as much as 100 times the size of mist droplets as used in '961. Moreover, '961 teaches away from using large drops of water having high momentum as desired in the present invention because the mist in the '961 patent is intended to be directed at the faces of people at close range and the cleaning stream of the present invention would clearly not be suitable for such purpose.

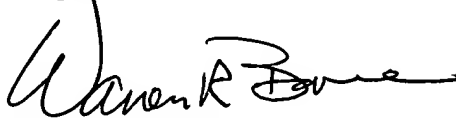
The Examiner notes that it would have been obvious to one of ordinary skill in the art to have used conventional nozzles with various fan speeds in the device of '961 for desired spray parameters and characteristics dependent on application. Applicant disagrees. The '961 patent is directed to evaporative cooling. There is no teaching or suggestion of using large water droplets as in the present invention. One skilled in that art armed with the teachings of '961 would only be led to use atomizing spray heads (col. 4, lines 6 and 7) that provide a finely divided, atomized water vapor mist for the intended

purpose. There would be no reason to use other types of spray heads that would emit larger droplets which are less effective for cooling. This would render the '961 device ineffective for its intended purpose of cooling people. The only suggestion of using large water drops propelled by a parallel gas flow to achieve enhanced cleaning is found in the present application. The '961 patent is completely devoid of such teaching.

It is a fundamental to 35 USC 103 that the Examiner cannot use applicants' own disclosure to show obviousness. If the Examiner has independent knowledge that is being relied on to reject the claims, the Examiner is required to present such knowledge in the form of an affidavit as required by 37 CFR 1.104(d)(2) so that applicants can be apprised of the basis for the rejection and can fairly judge the propriety of proceeding with the prosecution of the application. In response, the Examiner has cited that applicant discloses that the nozzles can be conventional. However there are many types of nozzles for many different purposes. Selection of a nozzle within the teachings of Utter et al to be effective for evaporative cooling would not achieve the purposes of the present invention. It is the combination of air speed and nozzle configuration that accomplishes the results of the present invention. The water spray of the present invention would be entirely unsuitable for the purposes described by Utter et al and the fine mist of Utter et al merely represents the prior art sprays that would be unsuitable for the purposes of the present invention.

It is believed that upon reconsideration all of the claims will be seen to be neither anticipated by nor unpatentable over the cited reference. Early and favorable consideration is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Warren R. Bovee", written in a cursive style.

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“VERSION WITH MARKINGS TO SHOW CHANGES MADE”

IN THE CLAIMS:

4. (Amended) A method according to claim 3 wherein said velocity ratio is in the range of 0.75 to 1.5[, preferably 0.8 to 1.2].

6. (Amended) A method according to claim 1 wherein the average water droplet velocity at the centre of the spray at 1m from the nozzle opening is not more than 35m/s[, preferably not more than 30m/s].

7. (Amended) A method according to claim 1 wherein the average water droplet velocity at the centre of the spray at 1m from the nozzle opening is not less than 15m/s[, preferably not less than 20m/s].

9. (Amended) A method according to claim 1 wherein the volumetric ratio of the gas flow to the water stream is at least 100[, preferably at least 200].